IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.:	10/802,014	**First Named Inventor:**	Razich Roufoogaran
Docket No.:	BP3274	**Art Unit:**	2618
Filed:	03/16/2004	**Examiner:**	Pablo N. Tran
Title:	Radio Front End and Applications Thereof		

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

It is respectfully requested that a review be made of the final rejection mailed July 18, 2007 (Final Office Action) prior to filing of the Appeal Brief. This request is being filed simultaneously with a Notice of Appeal. No amendments are filed with this request. Applicant believes that the rejections in the Final Office Action are clearly not proper and are without basis because there is a clear deficiency in the rejections.

Claim Rejections under 35 U.S.C. § 112

The Final Office Action rejected claims 1 and 16 under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention due to the phrase, "impedance at the first winding is substantially similar in the transmit mode and in the receive mode." In paragraph 6 of the Final Office Action, it states that the claimed limitation renders the claim indefinite because the Applicant needs to substantiate that the impedance is substantially similar in value or substantially similar in configuration/arrangement.

This rejection is clearly erroneous because the claim meets all the requirements of 35 U.S.C. 112. "Determining whether a claim is definite requires an analysis of 'whether one skilled in the art would understand the bounds of the claim when read in light of the specification . . . . If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, § 112 demands no more.' " *Personalized Media Communications, LLC v. U.S. Int'l Trade Comm'n*, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998) (citing *Miles*

Lab., Inc. v. Shandon, Inc., 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993) and finding that term digital detector is definite because the written description of the specification was sufficient to inform one skilled in the art of the meaning of the claim language). The phrase "impedance at the first winding is substantially similar in the transmit mode and in the receive mode" is clearly described in the specification. For example, *inter alia*, the specification at page 10, lines 5 through 11 and page 10, lines 29 through page 11, line 7 clearly describes the same terms in the claims 1 and 6. Thus, a person of skill in the art would clearly be able to understand the claim language when read in light of the specification.

Furthermore, as stated in the previous response filed on April 12, 2007, the word impedance is a term well known in the art to mean a measure of the response of an electric circuit to an alternating current, which is measured in ohms. The current is opposed by the capacitance and inductance of the circuit in addition to the resistance. The total opposition to the current flow is the impedance, which is given by a ratio of the voltage to the current in the circuit. [*The New Penguin Dictionary of Electronics*, Penguin Books, 1982, pp 231.]

Claim Rejections under 35 U.S.C. § 103

The Final Office Action rejected claims 1, 6, 16 and 21 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 7,065,327 to Macnally et al. (the Macnally reference) in view of U.S. Patent No. 6,999,743 to Sabouri et al. (the Sabouri reference). However, there are clear errors in the rejection in that neither the Macnally reference nor the Sabouri reference, either alone or in combination, disclose or suggest the requirements of the claims. As such, a prima facie case of obviousness has not been made.

Independent Claim 1 and dependent claim 6

The Office Action has failed to provide a prima facie case of obviousness for independent claim 1 because it has not shown that the cited references disclose or suggests the element, *inter alia*, of claim 1 of, "an adjustable load operably coupled to the second winding, wherein the adjustable load provides a first impedance based on a first impedance selection signal when the radio front end is in a transmit mode and provides a second impedance based on a second impedance selection signal when the radio front end is in a receive mode such that impedance at the first winding is substantially similar in the transmit mode and in the receive mode."

With respect to the Macnally reference, it actually teaches away from the present invention. The Macnally reference merely discloses at Column 5, lines 11 through 14 that the "Antenna Interface" in Figure 1 includes, "an ISM band filter 112, a balun 114, an RF matching network 116 . . .". The Macnally reference nowhere discloses an adjustable load coupled to the second winding or any type of impedance selection signal. In fact, it specifically states at Column 6, lines 51 through 56 that the LNA has a first impedance transformation network, seen in Figure 2, for receiving a signal while the power amplifier has a singly matched network associated with it for transmission of a signal, as seen in Figure 12. Because the Macnally reference teaches that the PA and LNA have different associated impedance networks for transmission and reception of a signal that are not adjustable and without any type of selection signal, it teaches away from and nowhere discloses the element, *inter alia*, of claim 1 of, "an adjustable load operably coupled to the second winding, wherein the adjustable load provides a first impedance based on a first impedance selection signal when the radio front end is in a transmit mode and provides a second impedance based on a second impedance selection signal when the radio front end is in a receive mode such that impedance at the first winding is substantially similar in the transmit mode and in the receive mode." The Final Office Action agrees with this conclusion on page 3, last paragraph to first paragraph on page 4.

With respect to the Sabouri reference, it fails to add to the teachings of the Macnally reference. The Final Office Action states that Sabouri teaches "such matching network configuration." However, the Sabouri reference teaches away from the embodiment in claim 1. The Sabouri reference discloses a full duplex line interface that includes a transmit path and a receive path, wherein the line interface transmits and receives signals concurrently. As shown in Figure 1, the transmission path includes a transmit amplifier 16 with the output of the amplifier 16 serially passed through a pair of matching impedances 20 (each $Z_M/2$) , as described at column 2, lines 18 through 27. The receive path includes a second filter 30 that is connected across the matching impedances 20, as described at column 2, lines 32 through 35. As stated at column 2, lines 51 through 53, "While the matching impedance manifests itself significantly larger to the received signal path, it appears with its actual value for the transmit signal." The Sabouri reference thus discloses different impedance for the received signal path and for the transmit signal and nowhere discloses that the matching impedances 20 are adjustable loads or any type of impedance selection signal. Because the Sabouri reference teaches that the transmit and receive paths have different associated impedances for transmission and reception of a signal

that are not adjustable and without any type of selection signal, it teaches away from and nowhere discloses the element, *inter alia*, of claim 1 of, "an adjustable load operably coupled to the second winding, wherein the adjustable load provides a first impedance based on a first impedance selection signal when the radio front end is in a transmit mode and provides a second impedance based on a second impedance selection signal when the radio front end is in a receive mode such that impedance at the first winding is substantially similar in the transmit mode and in the receive mode."

Finally, the Office Action has not shown how the combination of the Macnally and Sabouri reference suggest the claimed requirements. In fact, the combination teaches away from the claimed requirements by teaching different impedance networks and values for transmission and reception of signals and no description of an adjustable load or any type of impedance selection signal associated with an adjustable load such that impedance is substantially similar in the transmit mode and in the receive mode. When evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. In re Fine, 873 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Since the Office Action has failed to show how the Macnally reference and Sabouri reference teach or suggest all limitations of claim 1 or any of the claimed limitations of dependent claim 6, a prima facie case of obviousness has not been made.

Independent Claim 16 and dependent claim 21

The Office Action has failed to provide a prima facie case of obviousness for independent claim 16 because it has not shown that the cited references disclose or suggest the element, *inter alia*, of claim 16 of, "a radio front end includes . . . an adjustable load operably coupled to the second winding, wherein the adjustable load provides a first impedance based on a first impedance selection signal when the radio front end is in a transmit mode and provides a second impedance based on a second impedance selection signal when the radio front end is in a receive mode such that impedance at the first winding is substantially similar in the transmit mode and in the receive mode."

As stated above with respect to claim 1, with respect to the Macnally reference, it actually teaches away from the present invention. The Macnally reference specifically states at Column 6, lines 51 through 56 that the LNA has a first impedance transformation network, seen in Figure 2, for receiving a signal while the power amplifier has a singly matched network associated with it for transmission of a signal, as seen in Figure 12. Because the Macnally

reference teaches that the PA and LNA have different associated impedance networks for transmission and reception of a signal that are not adjustable and without any type of selection signal, it teaches away from and nowhere discloses the elements of claim 16.

With respect to the Sabouri reference, it fails to add to the teachings of the Macnally reference. As stated in the Sabouri reference at column 2, lines 51 through 53, "While the matching impedance manifests itself significantly larger to the received signal path, it appears with its actual value for the transmit signal." The Sabouri reference thus discloses different impedance for the received signal path and for the transmit signal path and nowhere discloses that the matching impedances 20 are adjustable loads or any type of impedance selection signal.

Finally, the Office Action has not shown how the combination of the Macnally and Sabouri reference suggest the claimed requirements. In fact, the combination teaches away from the claimed requirements by teaching different impedance networks and values for transmission and reception of signals and no description of an adjustable load or any type of impedance selection signal associated with an adjustable load such that impedance is substantially similar in the transmit mode and in the receive mode. When evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. In re Fine, 873 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Since the Office Action has failed to show how the Macnally reference and Sabouri reference teach or suggest all limitations of claim 16 or any of the claimed limitations of dependent claim 21, a prima facie case of obviousness has not been made.

For the above reasons, the rejections in the Final Office Action have omissions of one or more essential elements needed for a prima facie rejection. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 240-5324.

Respectfully submitted,
Garlick, Harrison & Markison

Dated: October 18, 2007

/Jessica W. Smith/

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
BP3274

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Application Number	Filed
10/802,014	**03/16/2004**

First Named Inventor
Razich Roufoogaran

Art Unit	Examiner
2618	**Pablo N. Tran**

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☐ attorney or agent of record.
Registration number _____.

☒ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 **39,884**

/Jessica W. Smith/
Signature

Jessica W. Smith
Typed or printed name

(972) 240-5324
Telephone number

10-18-2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☑ *Total of **1** forms are submitted.

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